CLAIMS

Cancel claims 1-41.

42. (Original) A method of acquiring attitude of a satellite, comprising the steps of:

with a satellite transmit antenna that has a pointing attitude β that is referenced to an arbitrarily selected starting reference frame, transmitting transmit beams that have different respective transmit parameters p_{tr} and are arranged with a known spatial relationship;

slewing said satellite in a search trajectory that sweeps said transmit beams over a ground-based receiving terminal wherein said receiving terminal has a known terminal location λ;

identifying received transmit beams from their received respective transmit parameters p_{tr}, their recorded received power, the time when the beams are identified, and the pointing attitude β at the time; and

from identified transmit beams, determining said satellite attitude from said pointing attitude β, said identification order and time of these beams, and recorded power measurements of these beams.

43. (Original) The method of claim 42, wherein said transmit beams comprise at least three transmit beams.

44. (Original) The method of claim 42, wherein said transmit parameters p_{tr} are transmit frequencies.

45. (Original) The method of claim 42, wherein said transmit parameters p_{tr} are transmit modulations.

46. (Original) The method of claim 42, wherein said determining step includes the step of observing receive times of said transmit beams.

47. (Original) A method of acquiring attitude of a satellite, comprising the steps of:

from ground-based transmitting terminals that have known terminal locations λ, transmitting respective transmit signals that have respective transmit parameters p_{tr};

with a satellite receive antenna that has an estimated pointing attitude β that is referenced to an arbitrarily selected starting reference frame, forming receive beams;

slewing said satellite in a search trajectory that sweeps said receive beams with a search order over a selected transmitting terminal;

identifying said selected transmitting terminal from its respective received parameters p_{tr};

recording the received power, the time when the beams are identified and the pointing attitude at the time; and

determining said satellite attitude from the terminal location λ of said selected transmitting terminal and from said identification order, time, pointing attitude β, and received power.

48. (Original) The method of claim 47, wherein said received beams comprise at least three receive beams.

49. (Original) The method of claim 47, wherein said transmit parameters p_{tr} are transmit frequencies.

50. (Original) The method of claim 47, wherein said transmit parameters p_{tr} are transmit modulations.

51. (Original) The method of claim 47, wherein said determining step includes the step of observing receive times of said transmit signals.